

FLIGHT

The
AIRCRAFT
ENGINEER
&
AIRSHIPS

First Aero Weekly in the World

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM

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DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list:—

1925

- June 27 Royal Air Force Pageant, Hendon.
- June 27 R.A.F. Iraq Dinner, Holborn Restaurant, at 8.15 p.m.
- July 3-4 King's Cup Race.
- July 26-Aug. 9 Vauville Light 'Plane and Glider Meeting.
- Aug. 1-3 Royal Aero Club Race Meeting at Lympne.
- Sept. 19-28 F.I.A. Conference at Prague.
- Oct. 8 Aero Golfing Soc. Autumn Meeting, Walton Heath.
- Oct. 24-29 Schneider Cup Race, Baltimore, U.S.A.

1926

- Aug. Light Aeroplane Competition.

EDITORIAL COMMENT.



NCE more we are on the eve of the greatest British aviation event of the year and probably the finest flying display to be seen anywhere in the world. On Saturday of this week, June 27, will be held, at the London Aerodrome, Hendon, the Royal Air Force Display, as it is to be termed this year, as distinct from the title "Pageant" given to the event in previous years. These annual displays have come to be looked forward to by everyone at all interested in aviation, and certainly nowhere else in this country, nor probably in the universe, is it possible to see better examples of the art of flying.

The organisation of the R.A.F. Display has always been as near perfection as human beings are ever likely to achieve, and there is no reason to doubt that this year will be a worthy successor, from this point of view, to the previous displays for the organisation of which the R.A.F. has been responsible. A noteworthy feature of previous displays has been the total absence of accidents of any kind, and it is to be hoped that in this respect also Saturday's event will show no variation. It must, of course, be realised that in flying of the character shown at these displays there must always be an element of risk, but the training which the various pilots have undergone has been so thorough and painstaking that practically nothing is left to chance to avoid mishaps, and barring unforeseen accidents there is cause to hope that no untoward incident is likely to mar the proceedings.

Concerning the details of this year's Display we give elsewhere in this issue of FLIGHT a fairly full résumé, and we think it will be agreed that from the spectacular point of view Saturday's event promises to be at least up to the very high standard set in previous years. An innovation will be provided by the use, for the first time in public, of radio telephony in such events in which the squadron or wing commander gives instructions to his pilots, and the fact

that the general public in the enclosures will be able to hear the words of command, and then see the wing or squadron carry out the evolution, should add greatly, not only to the interest, but also to a better understanding of what is taking place. There is little need for us to single out any particular event here, but two items in which the personal skill of the pilots will be particularly important are the squadron drill in which a squadron carries out a number of evolutions, such as looping, rolling, and spinning. These should be extremely well worth watching, as should also the wing evolutions by four bombing squadrons, in which event no less than 36 aeroplanes will take part.

From the advance programme which we have been privileged to see, it would appear that there is this year a welcome increase in the number of new, or relatively new, types of machines being employed, although it must be admitted that too many old-timers still figure in the various events. If the Air Ministry had been able to make up its mind as to what it really did want in the way of new types, the majority of the R.A.F. would not have been mounted on war-time reconditioned machines as seems, unfortunately, now to be still the case. However, as we have said, there is a fairly considerable number of reasonably new types taking part in the various events, and it would seem that the proportion of new types to older ones is somewhat more promising than has been the case in previous displays. So far as can be ascertained the number of new types that will take part in the "Fly Past" is lamentably small, and we think that the Air Ministry could very well have given permission for machines to take part in this "Fly Past" which apparently have been regarded as too terribly secret and confidential to render such a course advisable. The amount of information of any value which could be gathered by people whom it is not desired should possess an intimate knowledge of our latest types would, we think, have been extremely small, and the inclusion of a few more new types would have been somewhat reassuring to those who are not quite certain that a sufficient proportion of the funds of the Air Estimates is being devoted to building new and improved types.

The quality of flying to be seen at the R.A.F. Display is, as we have already said, of such a very high order that it should be quite superfluous to recommend our readers to go to Hendon on Saturday. Even putting it on the lowest possible plane, the value given for money is quite exceptional. When to this is added the fact that the profits are devoted to various Royal Air Force Charities and that thus one combines duty with pleasure in a most convenient manner by going to the R.A.F. Display, there is surely little need to do other here than again to emphasise that this famous event takes place on Saturday and that there will be flying from 1.30 p.m. onwards.

Farthest North

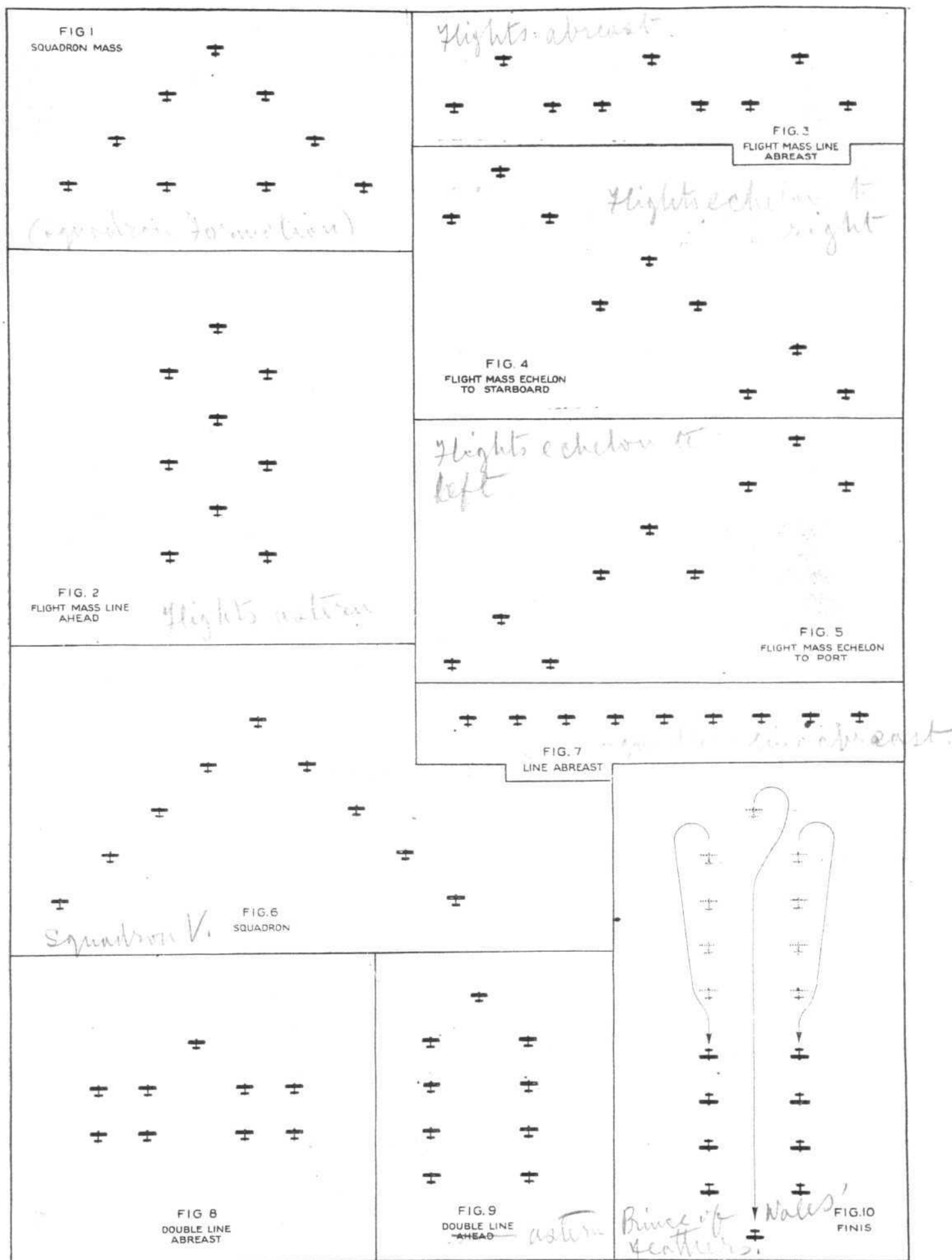
After weary weeks of waiting for news of Amundsen and his colleagues, the information that came through last week that he and his party were safe was received with great satisfaction, not only in Norway, but quite as much in this country. Although the expedition did not attain their goal, they have added

another valuable chapter to the history of exploration, and to the Amundsen expedition must be given the credit, not only for being the first to employ aircraft in Arctic exploration, but also for having taken their machines a good deal farther north than any aircraft has ever been before.

It is difficult, and indeed, almost impossible, to form any very clear idea of the conditions which obtain at 87 degs. 43 mins. N., but the brief accounts which have been published so far indicate that the conditions have been such as would be regarded as "impossible" under normal circumstances. When the machines alighted one of them actually had to run along a narrow winding water lane, and did not pull up until its nose actually touched the ice-blocks at the far end, so that had the lane been a few yards shorter it would appear likely that disaster would have overtaken the adventurers. Amundsen's account, without particularly stressing the point, reveals the fact that time after time when attempts were made to start, or when the machine had to be moved along a bridge laboriously prepared for it, the engines were called upon to do their work, and every time without exception they apparently responded nobly. To British readers of FLIGHT there will be a peculiar satisfaction in the fact that the engines were British Rolls-Royce of the "Eagle" type, which flew across the Atlantic, and apparently even with the thermometer as low as it was, the "Eagle" never once refused to start. In view of the doubt which has not infrequently been expressed as to the functioning of water-cooled engines in such low temperatures the behaviour of them during the Amundsen expedition must be regarded as proof positive that the water-cooled is not ruled out even by severe cold.

Concerning the lessons of the flight, it is difficult to speak with certainty. The rough treatment which the machines must have received whilst taxiing them about on the ice must have been such that it seems doubtful whether anything but a metal hull would have survived it, and one cannot withhold a certain amount of admiration for the Dornier design and construction which enabled one machine at any rate to return safely. It seems possible that the peculiar shape of the Dornier hull, and the side floats which are in the form of wing roots, may have helped, in a considerable measure, to prevent the machines from being crushed in the ice. Whether a wooden hull of "normal" design would have stood up to the treatment is at least open to discussion. One thing, at any rate, seems to be fairly well demonstrated—that the only type of heavier-than-air craft which could have survived was the flying-boat.

That the North Pole itself was not reached must necessarily have been a source of keen disappointment to Amundsen and his companions, but to the aviation world this is a point of minor importance. What does matter is that it has been definitely proved that heavier-than-air craft are capable of doing excellent work under the most difficult conditions imaginable, and for having given this proof, Roald Amundsen deserves the thanks of the entire aircraft world. It is rumoured that Amundsen intends to have another try, and we are quite sure that if he does all readers of FLIGHT will join us in expressing the hope that he will be able to attain the goal which he has set himself, and for which he has worked so long and persistently.



AT THE ROYAL AIR FORCE DISPLAY: One of the events for next Saturday's programme will be the Squadron Drill by No. 25 Fighter Squadron. The leader will give his orders by means of wireless, which will be heard, via loud speakers, in the various enclosures. We show above some of the formations, with their correct names, which the machines will carry out

THE ROYAL AIR FORCE DISPLAY

On Saturday next the Royal Air Force Display—formerly known as the Aerial Pageant—the proceeds of which are in aid of the R.A.F. Memorial Fund, will celebrate its sixth birthday at Hendon Aerodrome in the presence of the King and Queen, the Duke and Duchess of York, and a large number of distinguished and notable visitors, including members of the Cabinet, the House of Lords, the House of Commons, representatives of Overseas Dominions, Air, Naval and Military Attachés from foreign countries; and, of course, the "Man-in-the-Street" with his family will be there, we hope, in his thousands as before. It may be of interest to note here that some twenty public schools are sending parties of boys to witness the display.

It is not in name only that a change will be found in this year's great annual event, for the programme which has been arranged for Saturday's display contains many new and interesting features, whilst still retaining several of the events which proved to be so popular in the past. In fact, there are so many good things in store that in giving our readers a brief resumé of the various features we feel somewhat at a loss to know where to begin.

Formation flying and aerial drill have always been popular features, but this year we think it will be even more so for it is to be carried out on extremely interesting and novel lines, as, for instance, in the Squadron Drill by No. 25 Fighter Squadron under Squad.-Ldr. A. H. Peck, D.S.O., M.C., which will perform its evolutions by the aid of wireless telephony, each individual machine being thus able to receive instructions both from the Squadron Leader in the air and also from a

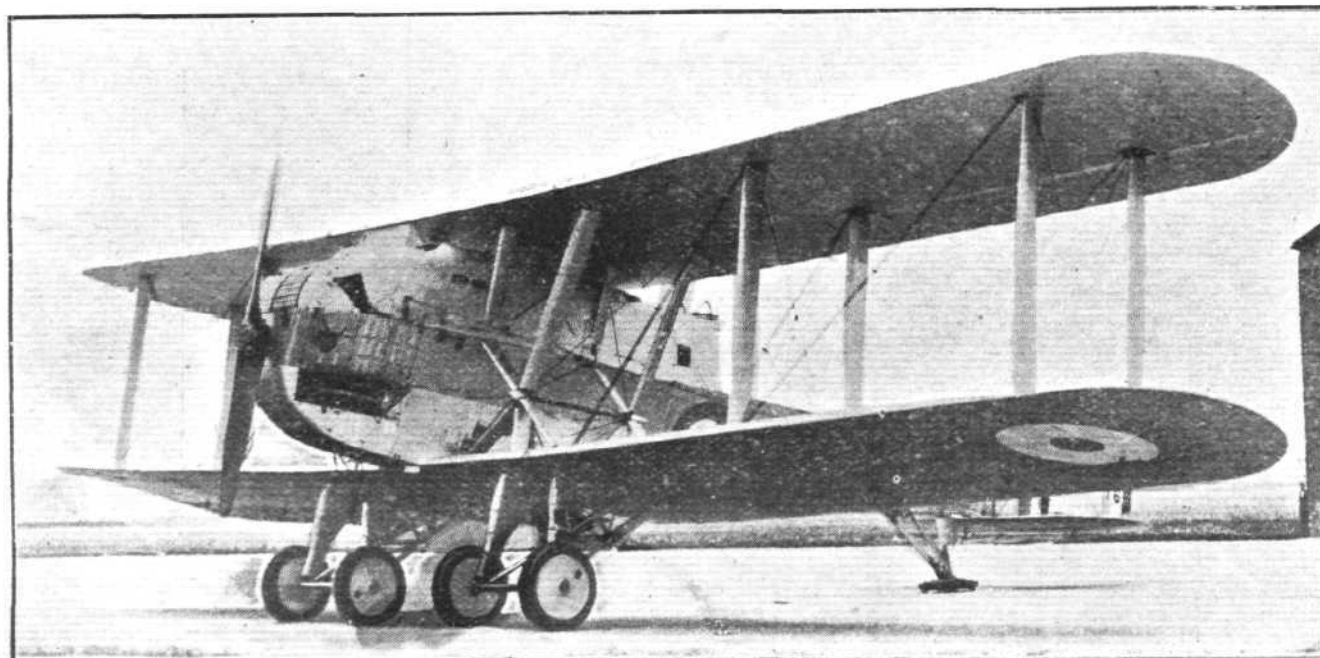
ground station. Previously, the orders of the leader were transmitted to the other pilots of the formation by means of a code either of hand signals or by special movements of the leader's aeroplane, but on Saturday visitors will be able to witness a demonstration of the use of radio or wireless in controlling squadron drill in the air. The orders given by the leader will not only be received by the other pilots, but will be picked up by a ground station and broadcast in the various enclosures by means of loud speakers. Visitors will thus be able to hear the leader's orders exactly as heard by the pilots of the other aeroplanes.

After completing various evolutions, the No. 25 Squadron whose call sign is "Cuckoo," will ask for instructions from the ground wireless station (call sign "Alligator"), and it is hoped that His Majesty will give an order to the leader.

It may be of interest to add here that for the few who will not be present at the Display, the B.B.C. has arranged to broadcast from 2 LO and 5 XX this section of the programme, and possibly other items from the Display. While on the subject of wireless, we would like to take this opportunity of hoping that wireless amateurs and other experimenters in the neighbourhood of Hendon will cause no interference in or about a wave-length of 70 metres during the Display. Should anyone in the vicinity of the aerodrome desire to listen-in on this wave-length it is requested that they will take every precaution to prevent oscillation. It will be obvious that any interference with the ether would not only spoil the reception for the large number of people visiting the R.A.F.



This year's "Striking" Poster, by A. B. Cree, for the R.A.F. Display. It depicts tanks being bombed by aircraft from low altitude—one of the events on Saturday's programme.



AT THE R.A.F. DISPLAY : The Blackburn "Cubaroo" Torpedo Carrier (1,000 h.p. Napier "Cub").



AN EXPERIMENTAL MACHINE AT THE R.A.F. DISPLAY : The Boulton and Paul "Bodmin" (two 400 h.p. Napier "Lions") with gear transmission.

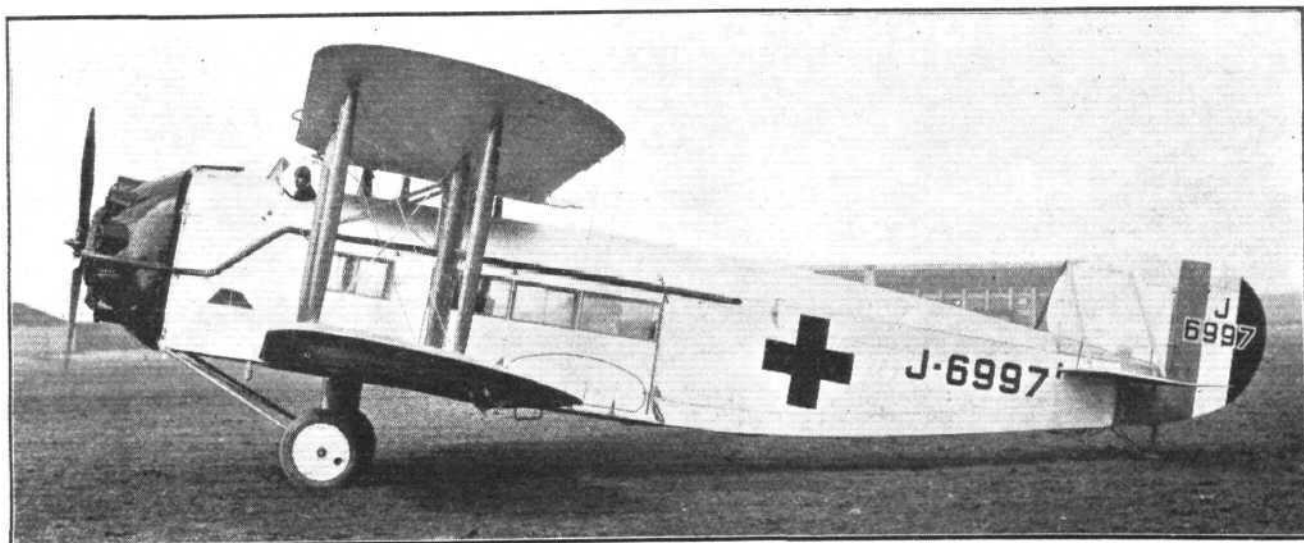
Display at Hendon, but it would also interrupt the performance for a somewhat larger (if possible!) audience which will be listening-in to the B.B.C. broadcast.

As visitors to Hendon will thus hear the leader's orders to the Squadron regarding certain formations, and as no doubt, many of our readers are quite unfamiliar with the various formations gone through in air drill, we have prepared a series of diagrams by means of which the reader will be able to recognise at a glance the various formations and know their correct names. For example, they will hear the order given to form "Flight Mass Line Ahead," and reference to the diagram will indicate the position taken up by the machines in carrying out this order. Again, should a reader observe a flight of aeroplanes in any particular formation our diagrams will tell him the correct term used for this formation.

The progress of war flying and air drill will be well illustrated by the evolutions of four bombing squadrons which are used in connection with home defence for counter offensive operations on enemy territories, each squadron consisting of nine machines. This squadron will comprise No. 12 Bombing Squadron under Squad.-Ldr. A. Gray, M.C.; No. 100 Bombing Squadron under Squad.-Ldr. H. F. Gordon, O.B.E.; No. 39 Bombing Squadron under Squad.-Ldr. H. V. de Crespigny, M.C., D.F.C., and No. 207 Bombing Squadron under Squad.-Ldr. V. Gaskell-Blackburn, D.F.C., A.F.C. The first two squadrons will be made up of Fairey "Fawns" with 450 h.p. Napier "Lion" engines and the last two squadrons of D.H.9a's with 400 h.p. Liberty engines. This event will be of a very spectacular nature, for the squadrons take off together two at a time and once in the

air go through various evolutions in extraordinarily close formation, and with a precision and regularity that reminds one of a parade drill of one of the Guards Regiments. All the squadrons taking part in the air drill have a wonderful record of service during the war and the demonstrations of flying in unison which they will present will show that the pilots of today are not less skilful than those who took part in air operations a few years ago.

Another popular event will be the low bombing competition, which is open to all flights of fighter Squadrons, the main event being a demonstration by the winners and runners-up. The object of this demonstration is to show the method by which a number of single-seater fighters can attack a ground target like a tank, machine gun base, anti-aircraft gun, bridges, etc., or at sea, control stations in battleships, anti-aircraft guns or decks of destroyers. The bombs are dropped from about 50 feet, no bomb sights being used, the release being solely at the judgment of the pilot. The object is to maintain a continuous attack on the target, but from different directions, for if the aeroplanes arrived one by one from the same direction they would offer a reasonable target to machine guns on the ground. The machines taking part in this event will consist of Gloucestershire "Grebes" from No. 25 Fighter Squadron and Siddeley Siskins from No. 41 Fighter Squadron. Another competition open to all flights of the Fighter Squadrons, the winners and runners-up being Saturday afternoon's performers, will consist of a demonstration of flight evolutions. This event is intended to demonstrate certain features of training carried out in Fighter Squadrons. The machines will go through



AT THE R.A.F. DISPLAY : The Bristol "Brandon" Ambulance (400 h.p. Bristol "Jupiter").

various formations of attack. Attack No. 1 is a simple method of attacking either a single hostile aircraft or a formation. In this No. 1 aeroplane retains his height in order to protect the other aeroplanes from attack whilst they are themselves attacking, and is also in a position to attack at a critical moment if circumstances require. Aeroplanes No. 2 and 3 attack simultaneously one from above and one from below. The second attack is of a type that can be used against a hostile aeroplane that is designed for all-round

be approximately 5 miles. The landing competition will again form an interesting and exciting event on Saturday's programme. In this a field of 150 yards square is marked out by light posts and fabric 4 feet high, representing a hedge. It is assumed that there are high trees over the area occupied by the spectators and any competitor flying over this area will be disqualified. The winner will be the pilot who, in the opinion of the judge, executes the best and safest landing within the enclosure. The pilots have to



IN THE "FLY PAST" at the R.A.F. DISPLAY: The Gloucestershire "Gamecock" single-seater Fighter (400 h.p. Bristol "Jupiter").

fire. In both these attacks it will be realised considerable skill is required in order that the pilots should not get into each others way. At the conclusion of each attack the escape is extremely important, demanding rapid movement and a quick reform of the flight. As in the previous event, the machines employed will be "Siskins" (No. 41 Fighter Squadron) and "Grebes" (No. 32 Fighter Squadron).

Then there will be the ever popular aerial combat; this time between a twin-engined Boulton and Paul "Bugle"

switch off at a height of about 1,000 feet and any pilot who uses his engine after switching off, or whose machine touches the hedge, or who damages any part of his machine in landing, is also disqualified. Of course, the machines used in this event will be the good old Avro 504's.

The Message Picking-up competition introduced last year will again be repeated on Saturday. This event demonstrates a method of communication between aircraft and troops on the ground. The competition is between a team of



AT THE R.A.F. DISPLAY: The Hawker "Hedgehog" three-seater Reconnaissance (400 h.p. Bristol "Jupiter.")

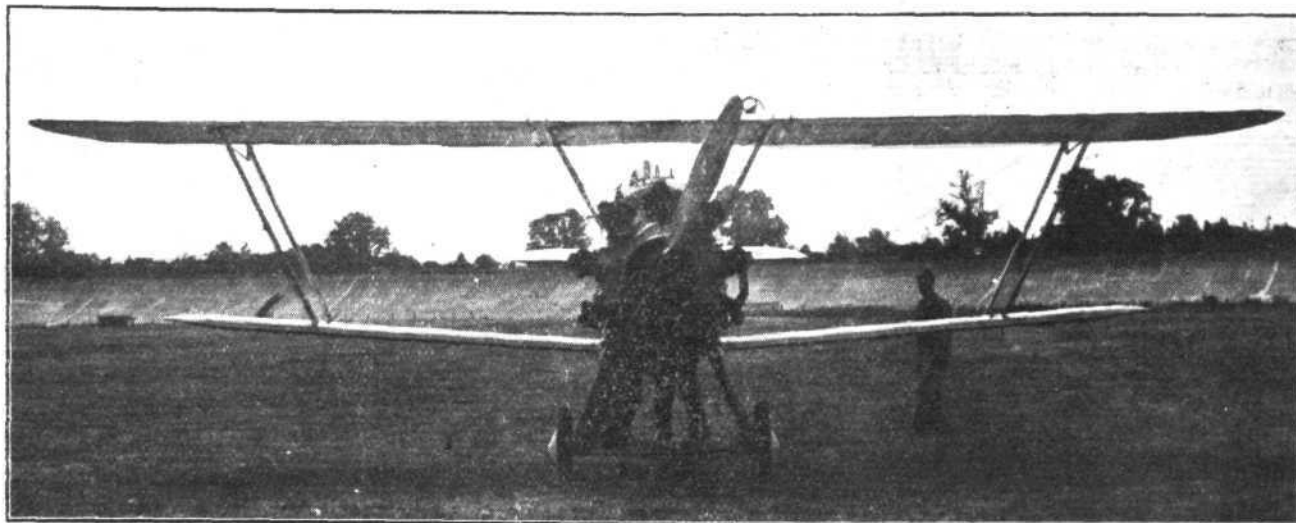
from No. 58 Bombing Squadron and two "Grebes" from the Central Flying School. A new item which will to a certain extent replace the Avro races held on previous occasions will be a light aeroplane race open to the directorates of the Air Ministry. In this event the D.H.53 light aeroplanes will be used and the distance of the course will

Bristol fighters from the School of Army Co-operation and each of the four Army Co-operation Squadrons at home. The two Bristol Fighters of each team pick up their respective message bags containing questions to be answered in the air and which are suspended on a line supported between two posts. Having picked up the message by means of a

trailing line with hooks, the answer to the message is written and dropped at the picking-up station. The time taken for each machine is that from the moment the message bag is picked up by the aeroplane until the answer is handed to the Umpire. The times taken by the two machines of each team are added together and the team with the smallest aggregate time is the winner.

During the afternoon there will be a Fly-Past of new and experimental types of aircraft. The machines will parade past the Royal Box, then take off and fly around the aero-

where, screened from seaward by the tropical vegetation, she lies in fancied security. Here, however, she is discovered by a reconnaissance machine (a supermarine "Seagull" amphibian) launched from an aircraft carrier operating with a small British Squadron. While reporting the cruiser's position this machine is heavily engaged by the cruiser's guns and five Fairey "Flycatcher" Fleet Fighters are despatched from the carrier to attack the guns' crews and enable the reconnaissance machine to complete its work. Meanwhile, heavy bombing machines consisting of



The Hawker "Heron," a single-seater Fighter of metal construction, fitted with a 400 h.p. Bristol "Jupiter," which will be seen at the R.A.F. Display at Hendon on Saturday.

drome. It is anticipated that the following types of aeroplanes will take part:—The Blackburn "Cubaroo" torpedo carrier (1,000 h.p. Napier "Cub"), the Boulton and Paul "Bodmin," a gear-driven twin screw experimental biplane (450 h.p. Napier "Lion"), the Bristol "Brandon" ambulance (400 h.p. Bristol "Jupiter"); De Havilland 54 Civil Transport (650 h.p. Rolls-Royce "Condor")—a detailed description of which will be found elsewhere in this issue of FLIGHT; Gloucestershire "Gamecock" single seater fighter (400 h.p. Bristol "Jupiter"); Hawker "Heron" single seater fighter of metal construction (400 h.p. "Jupiter"); Hawker

nine Vickers "Virginia's" and three Avro "Aldershots" summoned by wireless from a base nearby, hasten to the scene, arriving shortly after the Fleet Fighters, and successfully finishes off the cruiser.

In conclusion we wish to point out that special arrangements have been made to enable the enormous crowds, which are expected to attend Saturday's Display, to reach Hendon easily, and of course to get away again. It should be remembered that the new Tube Station at Collindale, on the Edgware Tube, is within two minutes of the aerodrome, and the special two-minute service which, we understand, will be



AT THE R.A.F. DISPLAY: The Short "Springbok" Army Co-operation (400 h.p. Bristol "Jupiter").

"Hedgehog" three-seater reconnaissance (400 h.p. Bristol "Jupiter") and Vickers "Vanguard" Civil Transport (two Rolls-Royce "Condors").

As on previous occasions, the afternoon's programme will be brought to a close with a thrilling aerial tit-bit. Saturday's story will be as follows: An enemy cruiser, the last of the commerce destroyers, which, on the outbreak of the war were at large on the trade routes of the world, her speed reduced through lack of docking facilities, and with enemies closing in on every side, has taken refuge in a tropical river,

provided for the Display should afford an excellent means of travelling to and from the aerodrome. 'Bus and tram services will also be supplemented to meet the extra demands.

The aerodrome gates will be open from 11.30 a.m., from which hour until the Display proper commences at 3 p.m., various preliminary events will take place and test flights made. From 1 p.m. the Royal Air Force Band will be playing. Prices of admission range from 2s., 5s. and 10s., while boxes may be obtained for £4, £5, and £7. Cars are charged 5s. each (including liveried chauffeur).

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

THE KING'S CUP, JULY 3 AND 4, 1925

Start and Finish Croydon Aerodrome

THE start each morning will be about six o'clock and competitors are expected to return to Croydon each evening between five and seven o'clock.

The Royal Aero Club has decided to admit the public free to the north-west corner of Croydon Aerodrome.

There will be a special reserved enclosure on the south-west end of the aerodrome for which a charge of 2s. will be made. Motor cars will also be charged 2s.

Members and associates of the Royal Aero Club and the London Aeroplane Club will be admitted free on presentation of their membership badges.

Racing Committee

A MEETING of the Racing Committee was held on Monday, June 22, 1925, when there were present:—Lieut.-Col. M. O. Darby, O.B.E., in the chair; Lord Edward A. Grosvenor, Lieut.-Col. F. K. McClean, A.F.C., Capt. C. B. Wilson, M.C., Mr. Howard T. Wright, and the Secretary.

THE KING'S CUP AIR RACE.—The following officials were appointed:—

Croydon

Judge.—Brig.Gen. Sir Capel Holden, K.C.B., F.R.S.
Stewards.—Air Vice-Marshal Sir W. S. Brancker, K.C.B., A.F.C., Lord Edward A. Grosvenor, Capt. C. B. Wilson, M.C.
Timekeeper and Starter.—Col. F. Lindsay Lloyd, C.M.G., C.B.E.

Press Steward.—Sir Guy Standing, K.B.E.

Clerk of the Course.—Capt. A. R. Dresser.

Handicapper.—Capt. R. J. Goodman Crouch.

Harrogate

Aerodrome Officials.—Mr. Stuart A. Hirst and members of the Yorkshire Aeroplane Club.

Royal Aero Club Official.—Maj. R. H. Mayo.

Timekeeper.—Mr. A. Fattorini.

Newcastle-on-Tyne

Aerodrome Officials.—Mr. A. E. George and members of the Newcastle-on-Tyne Aero Club.

Royal Aero Club Officials.—Mr. Howard T. Wright, Mr. N. Foster, Mr. L. De Lorient.

Timekeeper.—Maj. Brian M. Dodds.

Renfrew

Aerodrome Officials.—Mr. J. Allison, Jun., and Mr. A. P. Caird.

Royal Aero Club Official.—Lieut.-Col. W. A. Bristow.

Timekeeper.—Mr. A. G. Rennie.

Blackpool

Royal Aero Club Officials.—Mr. J. F. Leeming (Lancashire Aero Club), Flying Officer E. D. Salthouse (Lancashire Aero Club) and Mr. T. Prince (Lancashire Aero Club).

Sealand, Shotwick

Aerodrome Official.—Wing-Commander C. T. Maclean, D.S.O., M.C.

Royal Aero Club Officials.—Wing-Commander T. O'B. Hubbard, M.C., A.F.C., Capt. H. S. Grant (Lancashire Aero Club) and Mr. J. P. Hall (Lancashire Aero Club).

Bristol (Filton)

Aerodrome Official.—Mr. Herbert J. Thomas.

Royal Aero Club Official.—Capt. L. T. G. Mansell.

Timekeeper.—Mr. A. G. Reynolds.

The Secretary reported the arrangements at the various controls, which were approved.

"Newcastle Chronicle, Ltd." Prize

The Secretary reported that the *Newcastle Chronicle, Ltd.*, had presented a cup, value £25, to be awarded to the entrant of the aircraft which makes the fastest handicap time from the commencement of the race to the Newcastle control on the second day.

The Secretary also reported the following donations towards the expenses of the race:—

Blackpool Corporation	£50
Blackpool Tower Co., Ltd.	£25

Offices: THE ROYAL AERO CLUB,
3, CLIFFORD STREET, LONDON, W. 1.

H. E. PERRIN, Secretary

Gordon-Bennett Balloon Race Result

THE Sporting Committee of the Aero Club of Belgium has announced the result of the Gordon-Bennett Balloon Race as follows:—

(1) The balloon Prince Leopold (Belgium); pilot, M. Veenstra, distance covered 1,345 kilometres (840 miles). (2) The Belgica (Belgium); pilot, Lieutenant de Muyter, 661½ km. (413 miles). (3) The Ciampino V. (Italy). Commandante Valle, 596 km. (372 miles).

Of the three British entries, the Banshee III (Squadron-Leader Baldwin), and Miramar (Captain Spencer), were placed eighth and ninth respectively, and the Elsie (Captain Johnson), fourteenth. The American, Mr. Van Orman, who descended on the bridge of a vessel at sea, was among those unplaced.

Mrs. John Dunville Makes Night Balloon Trip

MRS. JOHN DUNVILLE, accompanied by her son, Capt. M. Dunville and Commander Baldwin, made an ascent in the balloon "Banshee III" from the Welsh Harp, Hendon, at 1 a.m. on June 21, and landed near the Belgium frontier later that morning.

Bulman Makes a Move

READERS of FLIGHT will be interested to learn that Flight-Lieut. P. W. S. Bulman, R.A.F., M.C., A.F.C., is leaving the Royal Air Force and will take up the post of chief test pilot to the Hawker Engineering Company on July 1. Bulman's transfer will be a very great loss to the R.A.F., and especially to the Royal Aircraft Establishment at Farnborough, where he has been doing exceptionally valuable work. On the other hand, the Hawker Engineering Company is to be congratulated upon having secured the services of a man who is generally regarded as being one of the very finest pilots in the world.

Italian Air Mission to Visit London

GENERAL ETTORE PRANDONI and Captain Francesco Bitossi, of the Italian Military Air Service, have left Rome on an official visit to London. They will be joined in Paris by Major Bertozzi and will fly from Paris to London to-morrow. The mission has been arranged by Signor Mussolini and General Bonzani, High Commissioner and Under-Secretary of State for Air, respectively, to return the visit paid last April by Sir Samuel Hoare, the British Air Minister.

The First Wright Biplane

ORVILLE WRIGHT has somewhat modified his original intention to present the first Wright biplane to South Kensington. He has decided, after all, to place the machine in the Smithsonian Institute (on condition that it be labelled, "The first man-carrying machine"). He has agreed, however, to send the machine to South Kensington Museum on loan for five years.

Italian Air Force Officers Entertained

THE officers of the Italian Air Force, under the command of Capitano Arturo Ferrarin, who flew to London from Turin on four Fiat B.R.1 bombers, were entertained at luncheon by H.M. Government at the Savoy Hotel on June 19. Air Vice-Marshal Steel was in the chair.

New Air Routes in Germany

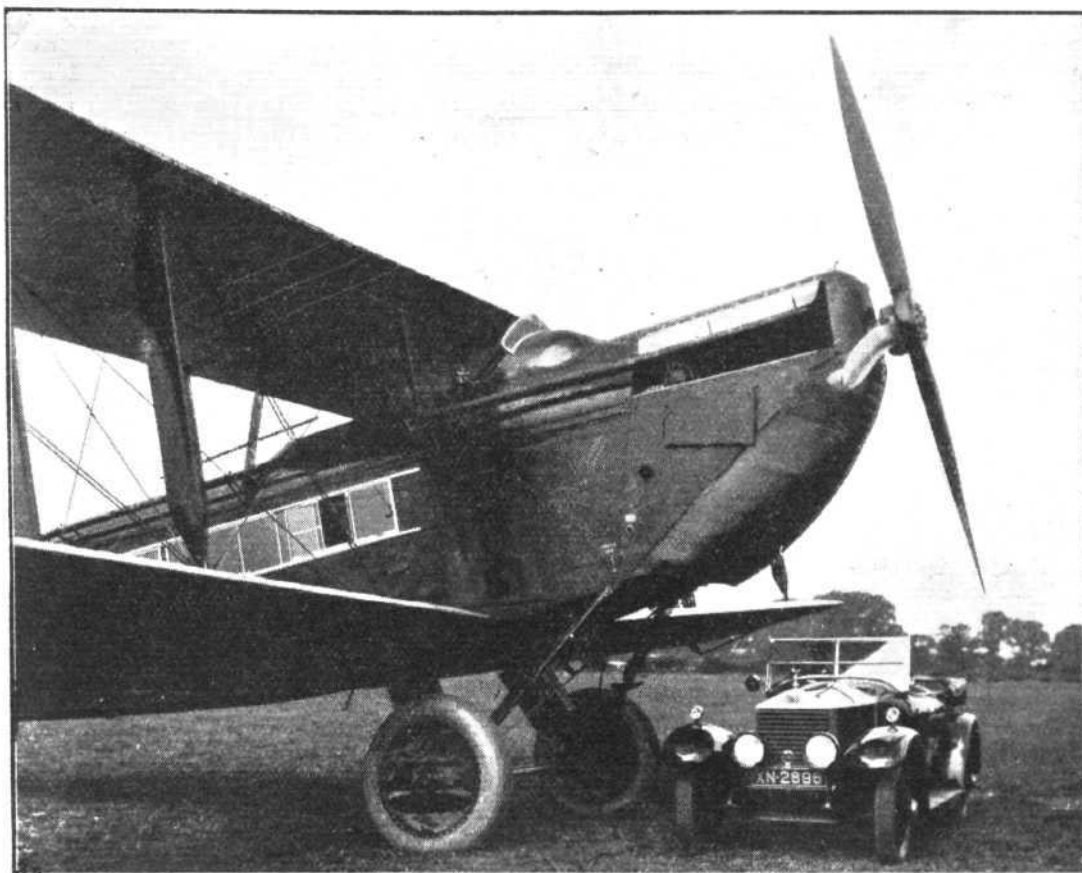
ACCORDING to *The Times* correspondent, the Junkers Aircraft Co. has applied to the German Ministry of Transport for permission to open a service of passenger seaplanes between Breslau-Glogau, Frankfurt-am-Oder and Stettin, along the River Oder. A daily service, to be known as the Pomeranian Line, began yesterday between Hamburg, Stettin, and Danzig, with extensions, on alternate days, to a number of Baltic watering places.

NEW DE HAVILLAND PASSENGER MACHINE

On Thursday of last week we were privileged to witness the first flying tests of the new De Havilland passenger biplane, the D.H. 54, which has now been finished as regards its main structure, although the cabin is not entirely finished internally in the matter of seats and other equipment. In the tests at Stag Lane Aerodrome the D.H.54 was piloted by Capt. Broad, who first took the machine up without passengers for a few trial flights, and later on went up again

will be even better. As the flights were in the nature of preliminary flying tests, no attempt was made at obtaining other than very rough performance figures and it would scarcely be fair to the company to give these at the present time, since they may be subject to considerable alteration after properly conducted tests. There is, however, reason to believe that the new De Havilland D.H.54 will have a greater top speed than the famous '34 and a considerably

The D.H. 54 is a very large single-engined machine, and in this photograph the Rolls-Royce car standing under the nose gives an excellent idea of the relative size.



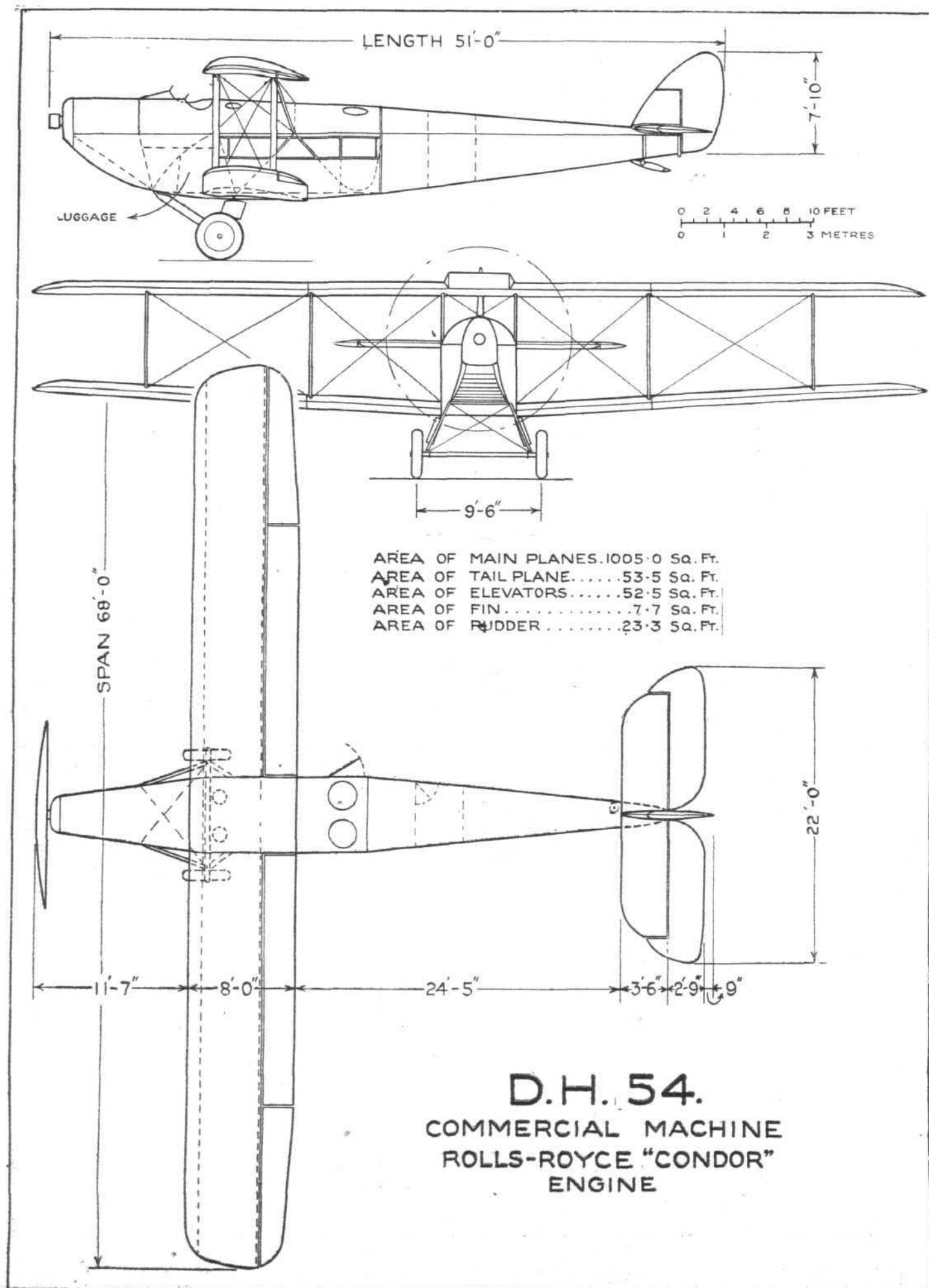
with several passengers in the cabin and one in the engineer's seat in front.

The machine appeared to get off very well indeed and to have a very good climb, not only as regards rate of climb, but even more so in the way of climbing *angle*. Even so it should be remembered that the machine is as yet untried and that the pilot is not yet quite used to handling it, so that there is every reason to believe that later on the climb

lower stalling speed. This is mainly due to the fact that though the power loading is approximately the same as that of the D.H. 34, *i.e.*, about 17 lbs. per h.p., the wing loading is a good deal less than that of the '34, while the use of the De Havilland automatic flap gear should give a considerably greater maximum unit lift. Apart from the reduction in stalling speed, another advantage of the lighter wing loading should be a considerably better angle of climb, an assumption



The D.H.54 with Rolls-Royce "Condor" engine has seating accommodation for 14 passengers.



D.H. 54 COMMERCIAL AEROPLANE : General arrangement drawings, to scale

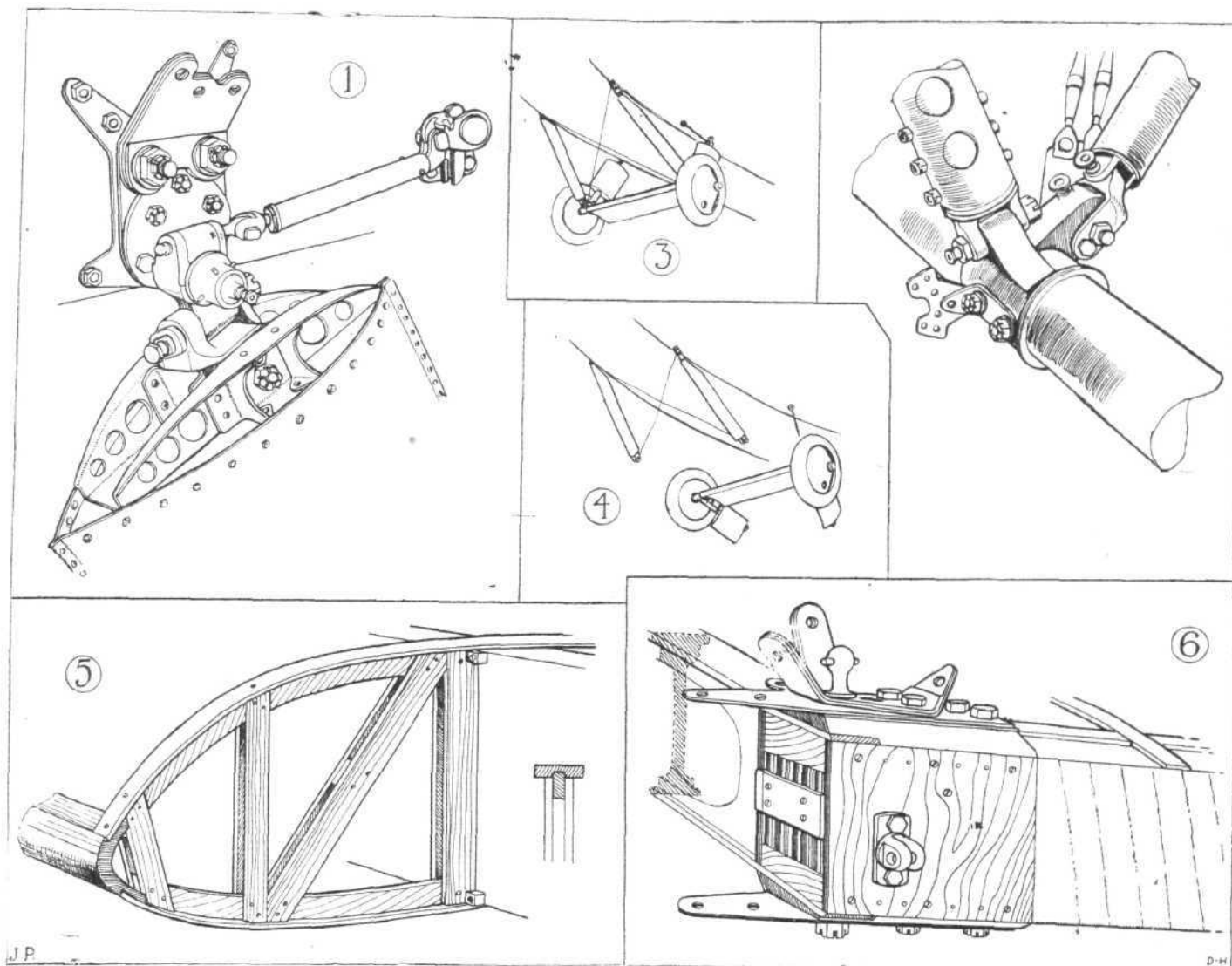
tion which was indicated by the preliminary test flights to be correct. Without going into details regarding performance, it may be said that the machine was designed to have a cruising speed of over 100 m.p.h. and that probably the actual cruising speed with full load will be in the neighbourhood of 103-104 m.p.h.

In general design and construction the D.H.54 follows very closely standard De Havilland practice, and at first glance the '54 looks very much like the '34, but on a larger scale. There are however, several noticeable differences in general design as well as in details.

One change in design is connected with the placing of the top plane in relation to the fuselage. Whereas in the '34 the top plane rests directly upon the fuselage, it is raised in the '54 a considerable distance above the top of the fuselage. This arrangement arises out of the fact that, with

with fish-plates inside and out. Each portion forms a complete structure in itself, and to keep out water in case of an emergency landing the small opening between the two sections is covered with fabric strip. To facilitate inspection of the rear portion of the fuselage large openings are provided in the bottom, which are covered with fabric so that when the machine has been in use for some time all that is necessary is to cut away a piece of the fabric when the interior structure can be inspected and after inspection the opening is again closed by dopping a piece of fabric over it.

The cabin portion of the fuselage is very large and roomy and seating accommodation is provided for fourteen passengers, the seats being arranged in three rows, two close together on one side and a single row on the other with a narrow gangway down between the two for the whole length of the cabin.



SOME CONSTRUCTIONAL DETAILS OF THE D.H.54 : 1, The rear chassis strut is attached to the lower longeron by a fork-end and pin : when the pin is withdrawn, by means of the crank and rod shown, the leg is free to drop ; 2, shows details of the hook attachment of axle to front chassis strut ; while 3 and 4 are diagrammatic representations of the manner in which the undercarriage drops. The front struts remain on the machine, but swing free. 5, gives details of the rib construction, and 6, shows a spar root, with strut attachment and wiring lugs.

the larger chord of the '54 wings, a larger cap was required, and as the fuselage is of approximately the same depth as that of the '34 the raising of the top plane resulted. In general design the D.H.54 is a normal two-bay tractor biplane with straight top plane and a fairly pronounced dihedral to the lower plane. A feature which impresses one both on looking at the machine and from an examination of the accompanying general arrangement drawings, is the high aspect ratio of the wings which have a span of 68 ft. and a chord of 8 ft. giving an aspect ratio of 8.5.

Constructionally also the D.H.54 follows normal De Havilland practice in that it has a flat-sided fuselage covered with ply-wood and having a deeply cambered roof. In view of its size the fuselage has been built in two separate sections. The joint in the fuselage occurs just aft of the cabin door, the joints being in the form of bolts through the longerons,

Aft of the cabin is a large lavatory with the usual fittings, the lavatory and the last two passenger seats being actually situated in the tail section of the fuselage. Access to the cabin is by a door on the starboard side, and in the design of the door provision has been made for making a water-tight joint between it and the door frame so that in case the machine should be forced to alight on the sea it will keep afloat for quite a long time. Provision has been made for heating and ventilating the cabin, the heating arrangements being in the form of a muff around one of the exhaust pipes and admitting warm air to the cabin near the floor. Fresh air is forced into the cabin from a scoop projecting out of the cabin roof, just behind the pilot's cockpit, and louvres near the back of the cabin exhaust the air so that a fresh supply of air is constantly filtering through the cabin. The rate at which the air can be changed is adjustable from within

so that the passengers can alter it from time to time so as to suit any conditions obtaining at the moment. A safety measure is provided by emergency exits in the roof of the cabin, the openings normally being covered with doped fabric which, however, can easily be cut or torn off should it for any reason become necessary for the passengers to emerge from the cabin through the roof, such as might occur in a forced alighting at sea.

The Rolls-Royce "Condor" engine is mounted on a composite structure of wood and steel, and is, of course, separated from the rest of the machine by a fire-proof bulkhead. The pilot's cockpit is in the roof and is further raised by being enclosed in a "hump," so that his view should be particularly good in almost all directions. Next to the pilot is another seat for a navigator or engineer, whichever is carried in the machine, and the view from this seat also is very good, although it is on a slightly lower level than the pilot's cockpit. The petrol system is of the simple gravity type, the main petrol tank being fitted in the top centre section, from which a "petroflex" tube runs to the engine. The capacity of the petrol tank is 148 gallons.

The undercarriage of the D.H. 54, although of the normal V-type, incorporates certain novel features, such as the shock-absorbing gear, which is in the form of rubber blocks working in compression, a type which has been found to give excellent results in practice, and to be light and durable, and reasonably cheap. A further feature of the design is that parts of the undercarriage, *i.e.*, the wheels, axle, and rear undercarriage struts, can be dropped should the machine be forced to come down on the sea. The front struts remain in place, but as they are free to swing loose once the rest of the undercarriage has dropped, they would presumably fly back against the bottom of the fuselage as the machine struck the water. It is expected that this arrangement will greatly reduce the tendency of the machine to nose over on striking the water, and it would therefore provide an extra safeguard.

The main planes of the D.H. 54 are of normal De Havilland

construction with box spars and spruce ribs. The latter are, however, of slightly different construction, the details of which are shown in one of our sketches. To facilitate transport the top wing is in three sections and the bottom wing in four sections. The wings are not, however, designed to fold. A novel feature in the wing design of the D.H. 54 is the incorporation of the new De Havilland automatic flap gear. This has previously been described in *FLIGHT*, but it may be stated briefly that it consists of trailing edge flaps extending the whole length of the wing span, but divided on each side. The inner portion of these trailing flaps lifts under air pressure against the action of springs, so that as the machine gathers speed the flaps rise to normal position. As the speed drops the flaps begin to descend, until at some pre-determined speed they are down to the maximum position, thus giving an increase in camber and incidence, accompanied by an increase in lift. The outer portion of the flaps, although moving with the main flaps, still maintain their differential movement and act as ailerons in the usual way. It is thought that by the use of this camber gear the landing speed of the machine will be reduced by quite a considerable amount, and the gear has the further advantage that it enables the machine to approach an aerodrome at low speed without having to drop its tail to any great extent, and in point of fact with the flaps down and the machine close to stalling angle the fuselage is still very nearly horizontal. This should add greatly to the feeling of safety among the passengers, since it is rather disconcerting to approach an aerodrome with the tail well down.

As we have already said, it is not possible at the moment to give exact performance figures, but it is hoped that these will be available shortly when we expect to publish them in *FLIGHT*. In the meantime it may be said that the empty weight of the D.H. 54 is 7,000 lbs. and the total loaded weight 11,000 lbs. As the wing area is 1,000 sq. ft., the wing loading will be 11 lbs. per sq. foot, which is fairly high, but with the flap gear it is expected that the landing speed will only be about 55 m.p.h.

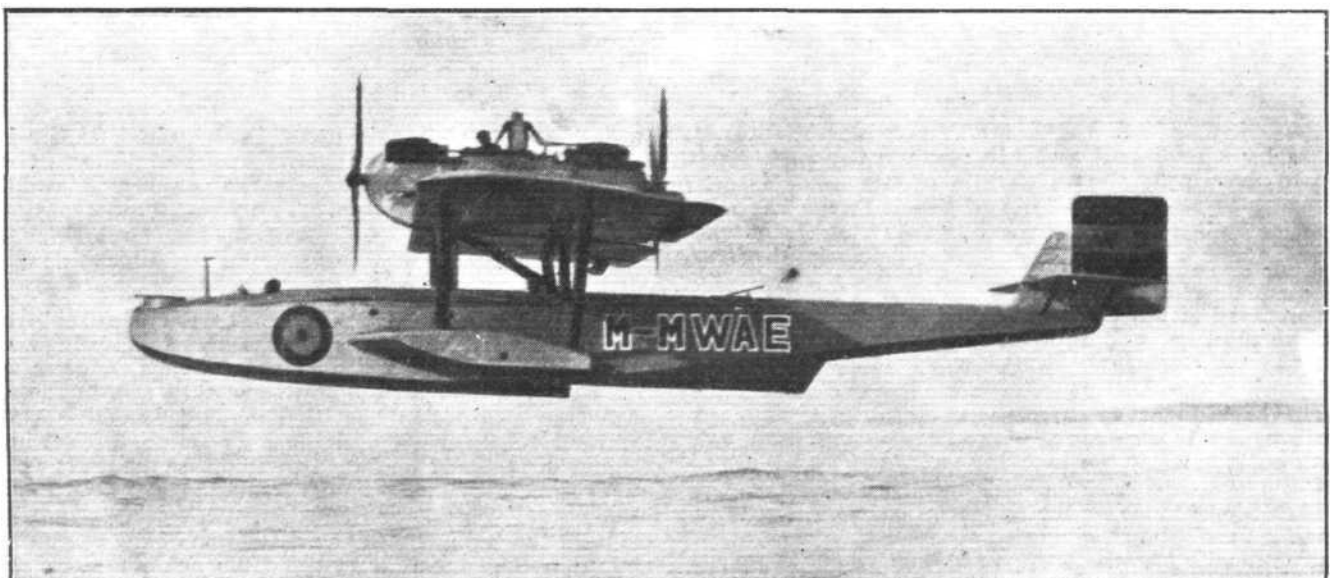
AMUNDSEN'S POLAR FLIGHT

On June 18 Captain Amundsen, who, with his five companions, Lieut. L. Dietrichson, Lincoln, Ellsworth, Carl Feucht, Lieut. Oskar Omdal, and Lieut. H. Riiser-Larsen, set out from Spitzbergen on May 21 in two Dornier-Wal Flying boats (each fitted with two 370 h.p. Rolls-Royce "Eagle IX" engines) in an attempt to fly to the North Pole, returned to Spitzbergen, and thus brought to a happy conclusion the four weeks of suspense, during which the world had not received news of any kind as to his movements.

It appears that after leaving King's Bay, Spitzbergen, the expedition encountered fog at Sydgat and therefore rose to an altitude of some 3,000 ft. in order to rise above it. They flew over the fog for two hours before, at last, they came to a clear sun-lit zone, with nothing but ice to be seen below them. This ice, contrary to expectations, did not appear to be at

all suitable for landing, but having absolute confidence in the Rolls-Royce "Eagles" they proceeded on their way. Observations showed, however, that they were too far to the west, so the course was laid further to the east.

There was still no sight of land, nor could any landing possibilities be observed. By 1 a.m. on May 22 half their petrol supply was consumed, so it was decided that an attempt to land should be made in order to take definite bearings of their position. Flying low they searched for the most suitable landing spot, and picking out a not particularly inviting ice lane, short and narrow, proceeded to land. Owing to an air lock in the petrol system, Amundsen's machine N.25, piloted by Riiser-Larsen, had to land somewhat hurriedly, and eventually came to rest at the extreme end of the ice lane, with its nose against an icefloe. The second machine, N.24,



SAFE! The good news of Amundsen's safe return, with all his party, from the Arctic regions was received last week. Above we show the Dornier-Wal mono. flying boat, fitted with two Rolls-Royce "Eagles," which was the type of machine in which Amundsen made his gallant attempt to reach the North Pole.

piloted by Dietrichson, landed safely some distance away.

Observations showed their position to be lat. 87-44 N, long. 10-20 W., about 136 miles from the Pole. Soundings taken at this position indicated a depth of 12,300 ft. For three weeks they remained stranded on the ice with the machines, every effort being made to free the latter from the ice-grip. It was decided to make an attempt to fly back on one of the machines, but it was not until June 15 that the N.25 was at last, after several failures during the three previous days, got free of the pack ice with the help of the engines. A taking-off space was cleared on an ice floe, on to which the N.25 had been coaxed, and taking their seats in the machine—from which everything that could be spared

had been discarded—and opening out the engines they managed to get the flying boat safely up into the air. At first they had to fly through fog, but gradually they climbed above this, and steered for Henlopen Strait. Eventually the Spitzbergen mountains were sighted, but their troubles were not yet over. The pilot noticed that the ailerons were giving trouble and then, when over the open sea, they finally jammed. The weather being squally it was impossible to proceed, and a descent had to be made on fairly rough sea. After taxiing for about half an hour land was reached on the west side of North Cape. Here they were picked up almost immediately by the sealer "Sjoeliv," which took the gallant little party of six back to Spitzbergen.

INDEPENDENT FORCE (R.A.F.) REUNION

FOR the seventh time, members of the Independent Force (R.A.F.) met, under the chairmanship of Air Chief Marshal Sir H. M. Trenchard, for their Reunion Dinner, on June 23, the R.A.F. Club, Piccadilly, being again the place of reunion. A departure was made this year, inasmuch as the order of the day was, "No speeches," beyond the usual loyal toasts—so that although the much appreciated remarks of the Air Chief were very much missed, the time after the banquet at the disposal of members for intercourse was increased.

A goodly gathering of this history-making unit was in attendance, and a delightful programme of music was given by an orchestra from the R.A.F. (Uxbridge) Band. The following is a list of those present—or who had arranged to be there if possible. :—

Air Chief Marshal.—Sir H. M. Trenchard, Bt., G.C.B., D.S.O.

Maj.-Gen.—J. E. Dickie, C.B., C.M.G.

Air Commodore.—C. L. N. Newall, G.M.G., C.B.E., A.M.

Col.—Sir Walter Lawrence, Bt., G.O.I.E., G.C.V.O., C.B.

Lieut.-Col.—R. H. Collier, D.S.O.; R. C. Donaldson-Hudson, D.S.O.; F. H. L. Errington, C.B., V.D.; E. B. Gordon, C.M.G., D.S.O.; J. Waley-Cohen, C.M.G., D.S.O.

Wing-Comdrs.—Hon. Maurice Baring, O.B.E.; H. R. Nicholl, O.B.E.; L. A. Pattinson, D.S.O., M.C., D.F.C.; J. C. Quinell, D.F.C.; C. E. H. Rathborne, D.S.O.; W. R. Read, M.C., D.F.C., A.F.C.

Majs.—J. W. Burt; S. A. Chambers; F. M. Iredale; L. G. S. Reynolds; T. V. Smith, M.C.

Squad-Ldrs.—C. R. Cox, A.F.C.; A. Gray, M.C.; W. J. Ryan, C.B.E.; J. Sowrey, A.F.C.

Cpts.—D. Brunt; P. R. Butler; L. C. Bygrave, M.B.E.; S. B. Collett; Dance; Fynn; Gibson; W. A. Herbert; T. B. Marson, M.B.E.; E. S. W. Moseley; G. Mackrell, A.F.C.; H. W. M. Paul; The Hon. J. St. V. Saumarez; A. Trussel, D.S.M.; R. T. Wilson.

Flt.-Lieuts.—A. N. Bengie; Burbidge; C. B. Dick-Celeland; R. Halley, D.F.C., A.F.C.; H. S. Robertson; W. D. Thorn; R. S. Topham, M.B., D.F.H.; H. S. P. Walmesley, M.C., D.F.C.

Lieuts.—J. A. Cairns; F. J. Parker; V. C. Varcoe.

F./Oftrs.—R. A. C. Brie; C. G. Jenyns; R. S. Martin.

2nd Lieuts.—T. W. Cummins.

C. G. Grey; and B. R. S. Jones.

R.A.F. CHAMPIONSHIPS

THE athletic championships of the Royal Air Force were concluded on the R.A.F. ground at Uxbridge on June 20.

The results were :—

Senior Division

Cranwell, 49 points (holders), 1; Eastchurch and Halton, 27 points, equal, 2; Henlow, 25 points, 4; Uxbridge, 23 points, 5; Manston and Netheravon, 12 points, level, 6; Flowerdown, 9 points, 8.

Junior Division

Digby, 41 points, 1; Gosport (holders), 27 points, Calshot, 21 points, 3; Sealand, 18 points, 4; Hawkinge 17 points, 5; Martlesham Heath, 13 points, 6; Northolt, 9 points, 7; Farnborough, 8 points, 8; Duxford, 7 points, 9; Old Sarum and Kenley, 5 points, level, 10; Ruislip and Spittlegate, 4 points, level, 12; Biggin Hill and Shrewsbury, 3 points, level, 14; Upavon, 1 point, 16.

Long Jump (Individual and Team).—Flying Officer Hadley (Spittlegate), holder, and Flying Officer Trower (Northolt) tied at 21 ft. 8 ins.; Corporal Amos (Netheravon), 21 ft. 3 ins. Hadley won the jump off. Open Team.—Cranwell, 58 ft. 7 ins.; Uxbridge, 58 ft. 5½ ins.; Netheravon, 57 ft. 8½ ins. Junior Team.—Northolt, 40 ft. 3½ ins.; Duxford, 39 ft. 9 ins.; Calshot, 39 ft. 3½ ins.

440 Yards Junior Relay.—Digby (Flying Officer Vines, Flying Officer Newman, Corporal Rapson, and Corporal Arthur), 1; Farnborough (holders), 2; Martlesham Heath, 3. Won by 3 yards; 2 yards. Time, 47 secs.

440 Yards Open Relay Race.—Cranwell (holders), 1; Henlow, 2; Eastchurch, 3. Won by a foot; half a yard. Time, 46 4-5 secs. Winning team, Corporal Mottershead, A/C. 2 Freeman, L.A/C. Fuller and A/C. Grigg.

Putting the Shot (Individual and Team Championship).—Flying Officer Sterling Webb (Eastchurch), 35 ft. 10 ins., 1; Corporal Field (Digby), 35 ft. 4½ ins., 2; Wing Commander Pattinson (Cranwell), 35 ft. 3½ ins., 3; Open Team.—Cranwell, 96 ft. 9 ins.; Eastchurch, 94 ft. 7½ ins.; Halton, 86 ft. 5½ ins. Junior Team.—Digby, 68 ft. 5 ins.; Gosport, 62 ft. 9 ins.; Hawkinge, 52 ft. 5½ ins.

Tug-of-War (Junior Championship).—Gosport (holders) beat Sealand by two straight pulls.

One Mile Team Race (Junior Championship).—A/C. Pugh (Northolt), 1; L.A/C. Morgan (Hawkinge), 2; L.A/C. Buxey (Worthydown), and A/C. Johnson (Lee-on-Solent),

dead-heat for 3rd place. Team Placings.—Calshot (holders), 6, 12 and 13), 31 points, 1; Sealand (8, 9 and 15), 32 points, 2; Hawkinge (2, 11 and 26), 39 points, 3. Individual event won by 10 yards; 5 yards. Time, 4 mins. 39 secs.

One Mile Team Race (Open Championship).—L.A/C. Goodall (Uxbridge), 1; A./A. Thomas (Cranwell), 2; L.A/C. Caines (Manston), 3; A/C. Hester (Uxbridge), 4; A/C. Ferris (Uxbridge), 5; A/C. Fahy (Halton), 6. Won by 6 yards; 10 yards. Time, 4 mins. 47 secs. Team placings.—Uxbridge (holders) (1, 4, 5), 10 points, 1; Cranwell (2, 8 and 11), 21 points, 2; Manston (3, 10 and 14), 27 points, 3.

Tug-of-War (Open Championship).—Cranwell (holders) beat Flowertown by two straight pulls.

High Jump (Open and Individual).—Flying Officer Nuttall (Kenley), holder, 5 ft. 10 ins., 1; Flying Officer Stephenson (Leuchars), 5 ft. 9 ins., 2; A/C. Gordon (Worthydown), 5 ft. 5 ins., and P.O. Vines (Digby), 5 ft. 5 ins., level, 3. Open team.—Cranwell, 15 ft. 9 ins.; Halton (holders), 15 ft. 8 ins.; Uxbridge, 15 ft. 6 ins. Junior Team.—Digby, 10 ft. 7 ins.; Kenley, 10 ft. 6 ins.; Ruislip, 10 ft. 4 ins.

Two Miles Relay (Junior Championship).—Digby (Corporal Tennicott, P.O. Nicholls, A/C. 1 Jackson, and P.O. Vines), 1; Gosport, 2; Hawkinge, 3; won by 15 yds; 3 yds. Time, 8 mins. 51 1-5 secs.

Two Miles Relay (Open Championship).—Cranwell (Sergeant Ellis, Corporal Sindell, A/A. Thomas, and L.A/C. Fuller), 1; Halton, 2; Henlow, 3. Won by 5 yds.; 6 yds. Time, 8 mins. 44 3-5 secs.

360 Yards Hurdles Relay (Junior Championship).—Digby (Flying Officer Newman, Flying Officer Vines, and A/C. 1, Knight), 1; Hawkinge, 2; Spittlegate (holders), 3. Won by 15 yds.; same. Time, 51 2-5 secs.

360 Yards Hurdles Relay (Open Championship).—Henlow (Flight Lieut. P. Scott, A/C. 1 R. Peachy, and L.A/C. W. Halls), 1; Halton, 2; Eastchurch, 3. Won by 10 yds.; 6 yds. Time, 54 3-5 secs.

One Mile Relay (Junior Championship).—Gosport (Flying Officer Howlett, L.A/C. Sheppard, L.A/C. Goldie, and L.A/C. Powell), 1; Digby, 2; Sealand, 3. Won by 8 yds.; 2 yds. Time, 3 mins. 44 3-5 secs.

One Mile Relay Race (Open Championship).—Cranwell (holders), (Flying Officer L. A. L. Firman, A/C. 2 Freeman, A/C. Fuller, A/C. Grigg), 1; Halton, 2; Eastchurch, 3. Won by 25 yds.; 20 yds. Time, 3 mins. 40 4-5 secs.

NATIONAL PHYSICAL LABORATORY

Annual Inspection by General Board

THE official opening of the new entrance gates to the National Physical Laboratory at Teddington was made the occasion, on June 23, of a reception and inspection of the various buildings by the General Board of the N.P.L., and invited guests. From the new entrance a broad avenue leads to a large circle laid out as a flower bed, and from this new roads radiate to different parts of the grounds, the two main roads being known as Kelvin Road and Lord Rayleigh Road. Speeches were made by Sir Charles Sherrington, President of the Royal Society, and by Lord Rayleigh, after which Sir Lionel Earle, Secretary to His Majesty's Office of Works, handed a special key to Sir Charles Sherrington, who unlocked the gates and declared the new entrance and roads to be opened. Guests were then received in the new aerodynamics building by Sir Joseph Petavel, Director of the N.P.L., Sir Charles Sherrington, O.M., President of the Royal Society and Chairman of the Board, and Sir Arthur Schuster, F.R.S.

When we state that no less than 181 different experimental and measuring apparatus were referred to in the official programme some idea of the magnitude of the work being carried out at the N.P.L. may be formed. It is obviously impossible for us to spare the space to refer in detail to all the subjects of interest which visitors had an opportunity to see, and we must content ourselves with a brief reference to the subjects which may be assumed to be of particular interest to readers of *FLIGHT*.

In the aerodynamics department the subjects of special interest were experiments with a model of the auto-giro,

invented by the Spanish engineer, de la Cierva, and which has been described and illustrated in *FLIGHT*. This machine it will be recollected, has its lifting surfaces in the form of a large four-bladed propeller which is not driven by the engine but is set in motion, when the machine gathers speed, by the air forces acting upon it. A considerable measure of success has been obtained in Spain with this machine. The model of the auto-giro was shown in No. 3 7-ft. wind tunnel. In the Duplex wind tunnel was shown a model of a Bristol fighter being tested for aerodynamic damping in yawing motion, while No. 1 4-ft. wind tunnel were seen measurements of fluctuating wind velocities by the hot-wire method. In the 7-ft. No. 1 wind-tunnel experiments were being carried out on the performance of air screws fitted with spinners in front of a tractor aeroplane body.

Always of great interest is the William Froude tank for testing models of ships' floats and flying-boat hulls. On this occasion the apparatus was shown for testing flying boat hulls for resistance, running angle, etc. Of great interest were a series of tests of a wax model of Nelson's flag-ship *Victory*.

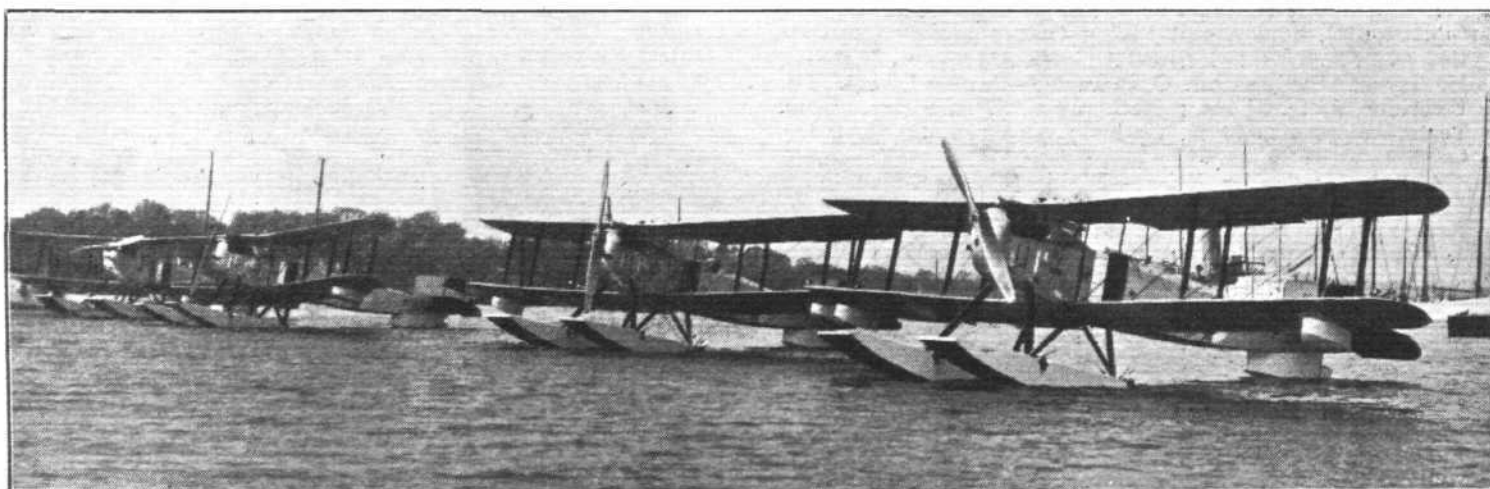
In the metallurgy building, visitors had an opportunity of seeing the micro-structure of metals and alloys seen under the microscope and projected and micro-structures shown as transparencies, while there was also an interesting exhibition of stainless steel in comparison with ordinary mild steel, samples of both being shown after immersion for different periods in sea water.

“BRISTOLS” IN THE RUNDFLUG

IN our account of the Round-Germany Flight reference has been made on various occasions to the “Bristol Lucifer” engines fitted in some of the machines. Certain further interesting facts relating to these engines have now become available and may, we think, be found of interest to readers of *FLIGHT*. It will be recollected that the Heinkel H.D.32 (No. 678), piloted by Lorenz, completed the whole Rundflug and was credited with the full distance of 5,324 kms. (3,300 miles). It is worthy of note that throughout the whole flight not a single replacement of any kind was made on this engine. Not only this, but, actually, the machine covered an extra 400 miles or so with which it was not credited, this extra distance being flown because of a return from an aerodrome which the pilot considered unsuitable for landing, so that actually the Heinkel machine with Bristol “Lucifer” engine covered something like 3,700 miles without anything whatever having to be changed. It is very much to be doubted whether the same can be said of any other engine in the competition, and, fine as this performance was, it did not represent the maximum of which the “Lucifer” was capable, as is shown by the fact that after the competition the engine was removed imme-

diately after the race for stripping and examination, when it was found that every part of the engine was in perfect condition, and that not a single replacement of even a minor character was found to be necessary. This is surely high testimony to the quality of Bristol design and workmanship. That the question of cost is not everything is strikingly shown by a letter received by the Bristol Aeroplane Co., in which the writer states that he had heard complaints of the cost of the “Lucifer” engine before the competition, but that after the competition several of the people who had made the complaints came along and told him what they could have done had they had a “Lucifer,” and what they would have saved had they had a “Lucifer.” Thus we have another case illustrating the truth of the old saying that “the best is the cheapest in the long run.”

Reference has already been made to the fact that another Bristol “Lucifer” fitted in Albatros L.69 did not get an opportunity of showing what it really could do, owing to the fact that the machine was finished late. A third “Lucifer” was, however, fitted in the Caspar C.26, and although this machine was 24 hours late in starting, the pilot covered the whole course except a few miles.



FAIREY SEAPLANES FOR HOLLAND : As previously reported in “*Flight*,” the Fairey Aviation Co., Ltd., of Hayes, recently delivered to the Dutch Government a batch of Series III seaplanes (Napier “Lion” engines). The above photograph shows the machines anchored at Hamble, from which place they were flown to Holland by Dutch pilots.

THE ROYAL AIR FORCE

London Gazette, June 16, 1925.

General Duties Branch

The follg. Pilot Officers are promoted to rank of Flying Officer:—A. S. Lewis (Dec. 14, 1924) H. N. Davies (Feb. 16); K. Maconochie (May 15); L. H. Ross (May 15); C. H. W. Boldero (May 15); C. F. Caunter (June 10). The follg. Pilot Officers on probation are confirmed in rank (May 23):—H. S. Martin, P. E. G. Sayer. Flying Officer R. G. Chapell takes rank and precedence as if his appointment as Flying Officer bore date March 31; reduction to take effect from April 9. Flight-Lieut. H. W. Clarke is transferred to Reserve, Class C (June 17). Sqdn. Leader T. B. Meyer relinquishes his short-service commn. on account of ill-health, and is permitted to retain his rank (June 17).

The follg. relinquish their temporary R.A.F. commns. on return to the Royal Navy or Royal Marines:—K. E. Smith, Lieut., R.N., Flying Officer, R.A.F., (June 7); C. J. Fell, Lieut., R.M., Flying Officer, R.A.F. (June 11).

Accountant Branch

Flying Officer D. J. Sherlock is granted a permanent commn. in rank stated (June 17).

Medical Branch

Flying Officer L. P. McCullagh, M.B., is granted a permanent commn. in rank stated (June 17); Flight-Lieut. W. G. L. Wambeck is promoted to the rank of Squadron Leader (June 18).

Reserve of Air Force Officers

C. H. E. Coles is granted a commission in Class A, General Duties Branch, as a Pilot Officer on probation (June 16); Pilot Officer C. G. Gass, M.C., is promoted to the rank of Flying Officer (May 6).

The follg. are confirmed in rank (June 16):—Flying Officers J. J. Flynn, J. H. Halliwell, J. A. Middleton, M.C. Pilot Officers A. D. M. Blair, T. E. Greenough, E. F. D. Gregory, G. H. Smith, M. A. Vachon, K. C. Whitwell, E. T. Shone, D. M. Tomlinson.

Flying Officer C. F. D. Evans is transferred from Class A to Class C (June 12).

Memorandum

The permission granted to Lieut. C. T. H. Page to retain rank is withdrawn on his enlistment in the Territorial Army (Feb. 9).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch

Flight Lieutenants: D. W. King, to R.A.F. Depot, on transfer to Home Estab. 3.6.25. R. Gambier-Parry, to R.A.F. Depot. 1.7.25.

Flying Officers: A. J. E. Broomfield, D.F.C., to No. 1 Wing H.Q., India. 25.3.25. R. E. H. Allen, to Air Ministry. 25.6.25. L. D. Stewart, to R.A.F. Base, Gosport. 9.6.25. T. O. Oakes, to No. 70 Sqn., Iraq. 3.5.25. W. C. Yale, to R.A.F. Depot, on transfer to Home Estab. 22.5.25.

Medical Branch

Flight Lieutenant R. Boog-Watson, M.B., D.P.H., to R.A.F. Officers' Hospital. 1.7.25.

Flying Officers: G. Clark, M.B., to R.A.F. Depot, on transfer to Home Estab. 22.5.25. E. P. Scholfield, M.B., to Station Commandant, Iraq. 12.5.25. A. Harvey, M.B., to H.Q., Egypt. 5.6.25.

IN PARLIAMENT

Parachute Fatal Accident

MR. DALTON, on June 15, asked the Secretary of State for Air whether he is aware that Corporal Sydney Ronald Wilson, of No. 12 Squadron, Royal Air Force, was killed on May 25 last while engaged in a practice parachute jump from an aeroplane; that this was his first flight; and that the evidence at the inquest showed that, being unaccustomed to flying, he lost his nerve and failed to pull the cord; whether it is customary to require airmen to jump from an aeroplane during their first flight; and, if so, whether he will cause this custom to be discontinued?

The Under-Secretary of State for Air (Major Sir Philip Sassoon): The answer to the first part of the question is in the affirmative, and I should like to express my very deep regret for the occurrence of this unfortunate accident. As regards the second part, it is not the case that it was Corporal Wilson's first flight. On the contrary, he had had previous air experience and had, indeed, qualified as an aerial gunner. It was, however, his first parachute jump from an aeroplane. As regards the third part, the evidence at the inquest was to the effect stated, except that I am not aware that there was any evidence to suggest that this airman was unaccustomed to flying, a suggestion which, as I have already explained, is contrary to the facts. As regards the fourth and fifth parts of the question, no officer or airman would be allowed to carry out a practice parachute jump until he possessed considerable air experience, and it is clearly laid down in Regulations that such jumps are only to be made by volunteers.

Major Hore-Belisha: Could the hon. baronet say if this death is considered to be a death caused in the course of duty, and if a pension or other compensation is payable to the dependants?

Sir P. Sassoon: I should like notice of that question.

Capt. Gee: Will the hon. baronet consider the advisability of setting up a Committee to go into this matter on account of the increasing number of fatal accidents taking place in the Air Force?

Capt. Benn: Is it not a fact that the increasing use of the parachute would be one of the greatest means of saving the life of the flying men?

British Army and Artillery Observation Balloons

VISCOUNT SANDON, on June 16, asked the Secretary of State for War whether he will make a statement on the Government policy as to a nucleus being trained and retained for operating artillery observation balloons; and whether these could be put into the field immediately on the outbreak of war?

The Financial Secretary to the War Office (Capt. Douglas King): It is not anticipated that balloon units would be required in the opening phases of a war, but they might become necessary as the war progresses. With a view to the development of the art of ballooning and in order to provide a nucleus for expansion after the outbreak of a war, a school of ballooning is being maintained by the Air Ministry.

Airship Development

SIR F. SYKES, on June 17, asked the Secretary of State for Air (1) If the intention to set up a Committee comprising representatives of the Air Ministry, the Admiralty and the War Office to act as the consultant body for the construction of airships has been abandoned; and, if so, what circumstances have led to such a decision;

Macmillan Arctic Expedition Starts

THE Arctic Expedition under Capt. Macmillan and Lieut.-Comdr. R. B. Byrd, U.S.N., the object of which is to investigate the supposed existence of unexplored land lying between the North Pole and the North-West Passage, left Boston on June 17 on board the steamer "Peary" for Wiscasset, Maine, where they will be joined by a second ship, the "Bowdoin." The latter is carrying three Loening amphibians, which will be employed in making the survey from the air. This type of machine was fully described in

(2) If it is still proposed to set up an advisory board to deal with aspects of airship development other than those which are purely technical, and to comprise representatives of the Treasury, Admiralty, War Office, Air Ministry, Colonial Office and General Post Office; if so, when the Committee will be set up; whether a representative of the Board of Trade will be added; and, if not, what circumstances have caused the abandonment of the intention to form such a Committee?

Sir S. Hoare: The mechanism of technical and advisory boards on airships which the late Government proposed has been before the Committee of Imperial Defence for consideration of terms of reference; but the matter has not been thought urgent at the present stage, since immediate purposes are served by the existence of the Airship Co-ordinating Sub-Committee of the Aeronautical Research Committee, and by the appointment of a special Admiralty liaison officer. In this connection, I would refer my hon. and gallant friend to the answer which I gave him on May 28 in reply to a question bearing on this subject.

Kenley Aerodrome and Low Flying

CAPTAIN GARRO-JONES asked the Secretary of State for Air whether any complaints have been addressed to the officer commanding Kenley Aerodrome on account of the low flying of aeroplanes over the thickly-populated districts surrounding one side of the aerodrome; whether he is aware that one fatal accident has already occurred to two flying officers by a crash on to a house in this neighbourhood; and whether, in the interests of the safety of the flying officers and to preserve the residential amenities of the neighbourhood, he can undertake to reduce the amount of low flying there to a minimum, and in particular to carry out, in future, at a more suitable place rehearsals of low bombing of targets for the aerial pageant and similar flying operations?

Sir S. Hoare: The answer to the first and second parts of the question is in the affirmative. All possible measures are taken to prevent avoidable low flying, but I would remind the hon. and gallant member of the fact that the flying in preparation for the annual display is an integral part of the service training of the squadrons concerned. I regret, therefore, that it is not practicable to adopt the suggestion in the last part of the question.

Round Germany Flight and British Engines

CAPTAIN BENN, on June 18, asked the Secretary of State for Air whether he can give any particulars as to what British engines were employed in the recent round-Germany flight; and what success they achieved?

The Under-Secretary of State for Air (Major Sir Philip Sassoon): As regards the first part of the question, aircraft in which the following British engines were installed, namely, the A.B.C. Scorpion, the Blackburne Tom-Tit and the Douglas Flat Twin, were entered for Class A (engines not exceeding 40 h.p.), and the Bristol Lucifer for Class C (engines from 80 h.p. to 120 h.p.). As regards the second part, the aircraft in which the Blackburne Tom-Tit was installed completed 820 miles and obtained fifth place in Class A, and that in which the Bristol Lucifer was installed obtained twelfth place in Class C, the full course for the latter competition being 3,307 miles, and the placing of the aircraft which completed it being assigned according to engine formula.

"FLIGHT" for May 21 last. The expedition is sponsored by the National Geographical Society, and has the co-operation of the U.S. Government.

R.A.F. Flying Accident

THE Air Ministry regrets to announce that as a result of an accident at Peshawar to a D.H.9A of No. 60 Squadron Risalpur, on June 21, Flying Officer Norris Carden Bretherton the pilot of the aircraft, and No. 240535 Acting Sergeant Henry Eustace Blanche were killed.



By DOUGLAS B. ARMSTRONG

Warsaw-Bucharest Service

AIR post services operated by the Polska Linja Lotnicza have recently been established between Warsaw and Bucharest, and Lemburg-Warsaw. Special cachets are employed at present with inscriptions in French and Polish.

A set of definitive air post stamps is in course of preparation at the State Printing Works, Warsaw, however, and will shortly be brought into use.

Pforzheim Glider Post

EXAMPLES are to hand of some special overprints on German air post stamps made on the occasion of a light 'plane meeting held at Pforzheim in Baden last December. These are the old 100 mark and the present 5 pf. overprinted "10 pf. Segelfluge Pforzheim" in blue. A variety exists with inverted overprint. An oblong cachet in red and a circular cachet in black were likewise employed in this connection.

Siamese Air Stamps

A BANGKOK correspondent who kindly sends us a complete set of the new Siamese air mail stamps informs us further that the use of special post-marks on the Siamese air mails has now been discontinued, and that any readers who have blocks of four showing these cancellations will be well advised not to part with them.

First Air-borne Letter

AN exhibit of particular interest to air-post collectors is to be seen in the aeronautical section of the British Government Building at Wembley this year. It is the first letter to be carried by air in Great Britain, having been dropped by the balloonist Gypson during a flight made eighty-four years ago. This unique "flown" cover bears the Lynn postmark of September 12, 1841, and that of London (Walworth Road) for the day following. Side by side with the Gypson cover are displayed the first letters to cross the Atlantic by aeroplane and airship—an Alcock cover and an R.34 letter. Mr. Hughes, editor of the *Air Post Bulletin* has been largely instrumental in arranging for this small, but choice air-post exhibit.

Air Post Awards at Paris

ENGLISH and American collectors were successful in securing the highest awards in the special class for air-post collections at the recent International Philatelic Exhibition in Paris. The Gold Medal went deservedly to Mr. W. J. Stanley, for his incomparable array of rarities, which included a strip of three "Hawkers" mint, the manuscript Martinsyde on cover, blocks of four of the rare Olten (Swiss) semi-official and other *rarae aves* to the value of some hundreds of pounds. Mr. J. A. Steinmetz, President of the Aero Club of Pennsylvania, gained the second award, a Silver Gilt Medal, with a unique collection of air-post covers of the United States, together with a Ross-Smith letter, an R.34, Kenilworth-Muizemburg card, etc., while the artistically displayed and historically interesting collection formed by Mr. T. A. Chapin was awarded a Silver Medal. Bronze Medal awards were obtained by Mr. R. E. R. Dalwick, one of the earliest collectors of air-post covers, for a few carefully selected Swiss items, and to Mr. T. H. Hinton who showed a remarkable specialised collection of Pigeon Post Stamps of the Great Barrier Island (N.Z.) services.

London-Malmö Air Service

A TOTAL weight of 13 oz. of mail matter is officially stated to have been carried on the opening day of the Anglo-Swedish service, May 15. Flown covers received the "Malmö I." postmark of "15.5.25" in conjunction with the regulation Swedish cachet "Services Aériens—Luftpost."

SOCIETY OF MODEL AERONAUTICAL ENGINEERS

THE flying meeting held on the Sudbury ground on June 20 was again well attended, and the number of entrants made competition keen. The results are as follows:—

Pilcher Cup Competition (Duration Competition for Fuselage Models).

- 1st, S. C. Hersom—34½ secs.
- 2nd, F. de P. Green—34 secs.
- 3rd, L. G. Tucker—24 secs.

Model Engineer No. 2 Cup

This competition was an extension of last year's Research Competition in which the models (fuselage gliders) were suspended in mid-air and dropped vertically downwards; this year the models were released when in a horizontal position. The results of this year's event are given below. Mr. Tucker's winning machine was of the "Dunne" type, and put up consistent performances on each flight, the model showing no sign whatever of getting into a vertical dive.

- 1st, L. G. Tucker.
- 2nd, S. C. Hersom.
- 3rd, F. de P. Green.

B. K. JOHNSON,
Competition Secretary, S.M.A.E.

PUBLICATIONS RECEIVED

Revue Juridique Internationale de la Locomotion Aérienne. April, May, June, 1925. Edition Aérienne, 4, Rue Tronchet, Paris.

Aeronautical Research Committee, Reports and Memoranda: No. 960 (E. 13).—Variation of Engine Power with Height. By H. L. Stevens. August, 1924. Price 9d. net. No. 961 (E. 14).—Variation of Engine Power with Height. By H. M. Garner and W. G. Jennings. September, 1924. Price 6d. net. H.M. Stationery Office, Kingsway, London, W.C. 2.

Aerial Surveying by Rapid Methods. By B. Melvill Jones and Maj. J. C. Griffiths. The Cambridge University Press, Fetter Lane, London, E.C. Price 16s. net.

Reichs-Luftkursbuch des Reichsverkehrsministeriums. Gebr. Radetzki, Friedrichstr. 16, Berlin, S.W. 48.

AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

APPLIED FOR IN 1923

Published June 25, 1925

- 32,449. M. A. KENNEY. Aerial landing and launching platform. (234,531.)

APPLIED FOR IN 1924

Published June 25, 1925

- 21,078. G. POVERUD. Aerial propellers. (234,683.)
- 25,596. CIE. d'APPLICATIONS MECANIKES. Grease gun. (225,194.)
- 25,714. CIE. d'APPLICATIONS MECANIKES. Cages for ball or roller bearing (225,195.)
- 30,711. C. LORENZEN and LORENZEN-TURBINEN-AKT.-GFS. Means for controlling the supercharging of aircraft i.c. engines. (234,728.)

APPLIED FOR IN 1925

Published June 25, 1925

- 10,933. M. A. KENNEY. Aerial landing and launching platform. (234,764.)

FLIGHT

The Aircraft Engineer and Airships

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